

**REMARKS**

Claims 1-10, 16 and 17 are all the claims pending in the application.

**I. Claim Rejections Under 35 U.S.C. § 103**

Claims 1, 3-10 and 17 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bessette et al (WO '573) in view of the machine translation of JP 08-325408 (JP '408).

Claim 2 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over WO '573, in view of the machine translation of JP '408 and further in view of JP-A-6-322168 (JP '168).

Claim 16 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over WO '573 in view of the machine translation of JP 08-325408.

Applicants respectfully traverse the rejections and submit that the cited references do not teach or suggest the present invention based on the following.

The Examiner recognizes that WO '573 does not teach the hydrated metal compound which is a composite of  $\text{MgO} \cdot \text{ZnO} \cdot \text{H}_2\text{O}$  or  $\text{MgO} \cdot \text{NiO} \cdot \text{H}_2\text{O}$  and relies on JP '408 for the teaching of a flame-retardant thermoplastic resin composition comprising an inorganic oxide, such as magnesium oxide, nickel oxide, aluminum oxide, zinc oxide, etc., wherein the exemplary oxides may be used alone or in combination.

Specifically, it is the Examiner's position that JP '408 teaches that it is known in the art to use a metallic oxide in hydrated form at paragraph [0003] and therefore the previous argument

that JP '408 does not teach a hydrated metal compound, much less a composite of  $\text{MgO} \cdot \text{ZnO} \cdot \text{H}_2\text{O}$  or  $\text{MgO} \cdot \text{NiO} \cdot \text{H}_2\text{O}$ , is unpersuasive.

However, JP '408 does not teach or suggest the hydrated metal compound which is a composite of  $\text{MgO} \cdot \text{ZnO} \cdot \text{H}_2\text{O}$  or  $\text{MgO} \cdot \text{NiO} \cdot \text{H}_2\text{O}$  as recited in present claim 1. JP '408 teaches that an inorganic oxide may be used in the flame-retardant composition and specifically exemplifies titanium oxide ( $\text{TiO}_2$ ), but there is no teaching or suggestion of a hydrated metal compound, much less a hydrated metal compound which is a composite of  $\text{MgO} \cdot \text{ZnO} \cdot \text{H}_2\text{O}$  or  $\text{MgO} \cdot \text{NiO} \cdot \text{H}_2\text{O}$ .

The composite metal hydroxide of the present invention is a composite of hydroxides and is completely different from a mixture of respective hydroxides. In the mixture of the hydrated metal oxides, respective hydrated metal oxides are merely mixed and they are each independently present. On the other hand, in the composite metal hydrate of the present invention, metal hydrates react with each other by mixing and subsequent calcinations (firing) thereof, whereby metal hydrates become unified in stable conditions and are present as a single compound. Accordingly, a mixture of hydrated metal oxides is completely different from the composite metal hydrate of the present invention.

Further, one of ordinary skill in the art would not have been motivated to modify the inorganic oxides disclosed in JP '408 and employ a hydrated metal hydroxide composite as recited in the present claims. Namely, in JP '408, inorganic oxides such as aluminum hydroxide and magnesium hydroxide are exemplified as conventional in the art, and the problems such as the large amount necessary to obtain enough flame retardancy and deteriorated mechanical

properties of the molded product obtained therefrom, are disclosed. Additionally, it is described that in order to solve these problems, heat expansive graphite and boron-containing compounds are used in combination as flame-retardant. Accordingly, a person skilled in the art would not have been motivated to use inorganic oxides causing these problems as a flame-retardant. Even further there is no description or suggestion in JP '408 for making a composite, which is recited in the present claims. Therefore, it is not expected from JP '408 to employ the composite metal hydroxide employed in the present invention.

Paragraph [003] of JP '408 relied on by the Examiner for the teaching that it is known in the art to metallic oxide in hydrated form actually teaches away from such use as in the present invention. Specifically paragraph [0003] of JP '408 states:

... in order to give sufficient fire retardancy for the thermoplastic which is easy to burn using the above-mentioned hydration metallic oxide, a lot of hydration metallic oxides needed to be added, and the mold goods obtained had the trouble that the fall of mechanical strength was remarkable and could not present practical use.

Thus, hydrated metallic oxides present the same problems discussed in the Response filed on August 2, 2006, which would not motivate one of ordinary skill in the art to modify JP '408, such as the large amount necessary to obtain enough flame retardancy and deteriorated mechanical properties of the molded product obtained therefrom. Additionally, JP '408 describes that in order to solve these problems, heat expansive graphite and boron-containing compounds are used in combination as flame-retardant and therefore a person skilled in the art would not have been motivated to use hydrated metallic oxides causing these problems as a flame-retardant.

None of the other cited art remedies the deficiencies of WO '573 and JP '408. Thus, the cited references do not teach or suggest the present invention, whether taken alone or in combination. Accordingly, for at least these reasons the present invention is not rendered obvious by the cited references.

In addition, Applicants submit a Supplemental Declaration herewith which shows that the present invention employing a hydrated composite metal hydroxide of the present invention provides unexpectedly superior results when compared to a comparative example in which a mixture of hydrated metal oxides is employed. A comparison of the results from inventive Examples 7, 8 and 9 with the results from Experiment 7 (Comparison) in the Supplemental Declaration shows that the present invention provides advantageous effects. Specifically, as shown based on a comparison between Example 9 and Experiment 7 (Comparison), it is not possible to obtain a sufficient degree of expansion and flame retardancy is unacceptable.

For this additional reason the present invention is not rendered obvious by the cited references.

Accordingly, Applicants respectfully request withdrawal of the § 103 rejection.

## **II. Conclusion**


In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Response under 37 C.F.R. § 1.114  
U.S. App. Ser. No. 09/750,125

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
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